

Application No. 09/894,375

NANS 1000-2

REMARKS

In the Final Official Action mailed 21 June 2004, the Examiner reviewed claims 1-14 and 33-35. The Examiner rejected claims 1, 4-7, 10, 13, 14 and 33-35 under 35 U.S.C. §103(a); claim 3 is rejected under 35 U.S.C. §103(a); and claim 2 and 8 are rejected under 35 U.S.C. §103(a), based primarily on the combination of U.S. Patent 5,405,646 (Nanis I) and U.S. Patent 5,478,657 (Suenaga et al.).

Applicant respectfully requests reconsideration based on two clear mistakes by the Examiner, and the resulting inadequacy of the prima facie case.

The present invention is based on the discoveries that, first, the Nanis I process can be applied to successfully bind nickel alloy layers, such as NiP, to the cold-worked surfaces of super smooth metallic substrates, which is non-obvious in its own right, and second, that the process results in formation of a nickel alloy layer "having surface roughness essentially unchanged from that of the cold worked surface." The present inventor did not invent super smooth substrates, but rather discovered a process for formation of nickel alloy layers on them that is very effective and relatively inexpensive.

The first mistake on which this request for reconsideration is based arises in the Examiner's argument that the limitation in independent claim 1 reading "providing a metal substrate having a cold worked surface with an average surface roughness of less than about 30 Angstroms," is met by the disclosure in Suenaga et al. at column 4, lines 17-18, reading "A 0.8 mm thick cold-rolled titanium plate or titanium alloy plate is punched into discs." This is a clear mistake. Cold rolling is the process by which an ingot is pressed into a sheet. It does not result in "a metal substrate having a cold worked surface with an average surface roughness of less than about 30 Angstroms." Suenaga et al, continues at column 4, lines 19 et seq., to describe subsequent treatment of the titanium discs, to achieve a smooth surface, including hot pressing, cutting, grinding and polishing. The cold worked surface features are the result of polishing to achieve a super smooth surface. They are not the result of cold rolling, as the Examiner asserts. Suenaga et al. does not mention the surface characteristics of the smooth titanium used in the experiments described, and therefore does not describe a cold worked surface. Accordingly, the Examiner's reliance on the fact that Suenaga uses a "cold rolled" sheet of titanium in the process, is a mistake, and reconsideration is requested.

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The second clear mistake, and the more important mistake, arises in the Examiner's characterization of the teaching in Nanis I, and the reliance upon Nanis I to provide a motivation to combine it with Suenaga et al. The Examiner has noted that Nanis I explains that its process masks "chemical non-uniformities" as justification to apply it to mask non-uniformities of the super smooth substrate (See Nanis I, column 6, lines 53-56,). However, the non-uniformities of a cold worked surface are mechanical. Claim 1 states that the thin metallic layer masks "chemical and mechanical variations of the substrate." The Nanis I patent describes use of the process to mask impurity elements, intermetallic inclusions, and "localized variations in disk surface chemistry" (see, Nanis I, column 2, line 50-column 3, line 11). Nanis I does not suggest that its process should be applied, as claimed herein, to mask the structural phenomenon, known as the Beilby layer, that results from cold working to achieve super smooth surfaces on metallic substrates.

Therefore, the Examiner is mistaken about the teaching of Nanis I, as it relates to application of the process to the super smooth surfaces claimed herein, and the arguments presented are reduced to the improper "obvious to try" rationale. The "obvious to try" argument is insufficient grounds for rejection, and reconsideration is therefore requested. See, MPEP, Revision 8, section 2145.X. Rather, clear motivation to modify the references must be set forth to establish a prima facie case of unpatentability.

Accordingly, in view of the two clear mistakes of fact relied upon by the Examiner, reconsideration of rejection is respectfully requested. Further specific arguments concerning the rejections are presented in the AMENDMENT filed 30 January 2004, and are incorporated herein by reference, for further reconsideration in light of the foregoing.

CONCLUSION

It is submitted that this application is now in condition for allowance, and such action is respectfully requested.

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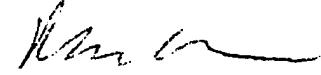
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The Commissioner is hereby authorized to charge any fee determined to be due in connection with this communication, or credit any overpayment, to our Deposit Account No. 50-0869 (NANS 1000-2).

Respectfully submitted,

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